CHAPTER 3
AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, & MITIGATION

3.1 LAND USE

Affected Environment

Imperial County occupies an area of 11,095 km^2 (4,284 mi^2) in the southeastern corner of California. It is bordered on the north by Riverside County, on the west by San Diego County, on the south by Mexico, and on the east by the Colorado River and Yuma County, Arizona. Approximately 50 percent of Imperial County lands are under Federal ownership and remain undeveloped. Developed areas comprise less than one percent of Imperial County. Within the City of El Centro, land use includes residential, commercial, industrial, health care, educational, and park uses. The "Land Use Element" of the *City of El Centro General Plan* and the *City of El Centro Redevelopment Plan* provide long-range planning for the physical use of land within the Sphere of Influence of the City. The "Conservation Element" of the *City of El Centro General Plan* also provides for development of areas of multiple land use to reduce frequency and length of vehicle trips. The interchange reconstruction project and other planned land uses in the vicinity of the proposed interchange reconstruction project are consistent with State, Regional and local long-range land use planning documents, including the Southern California Association of Governments (SCAG) *Regional Transportation Plan* (RTP).

El Centro has approximately 12,263 housing units with approximately 178 ha (440 ac) available for residential development. Existing housing consists of low-density residential, medium density residential, and high-medium density residential. Additionally, there are approximately 344 ha (850 ac) within the City of El Centro designated for commercial use, consisting of approximately 202 ha (500 ac) of General Commercial (GC) and 142 ha (350 ac) of Tourist/Commercial (CT). Another 68 ha (168 ac) is planned for annexation from Imperial County to the northern portion of El Centro for commercial use. The "El Centro Regional Commercial Overlay" (RC) encompasses a total of 389 ha (960 ac) located south of I-8, including a portion of the proposed project area (appendix A, exhibit 13, *El Centro Zoning & Land Use Map*). There are also approximately 219 ha (540 ac) designated for industrial development within the City. The majority of existing and planned industrial land use is concentrated in the eastern portion of the City.

In general, land use patterns in El Centro emanate from the Central Business District centered along Main Street. The intersection of I-8 and Imperial Avenue has created the opportunity for commercial expansion and diversification within the City. Northern Imperial Avenue has developed into a community-oriented retail shopping area providing many goods previously available only in the Central Business District. The I-8/Imperial Avenue interchange reconstruction project is located within the City of El Centro Redevelopment Project area. Adjacent to and north of the existing I-8/Imperial Avenue interchange, the area from La Brucherie Road to Cottonwood Circle is zoned single-family residential (R-1) and is completely

utilized (or "built-out") with single family housing (figure 1.2-1, *Project Alternatives and Study Area*). From Cottonwood Circle to 14th Street, the area is built-out with commercial and hotel uses and is zoned Tourist/Commercial (CT) (appendix A, exhibit 13, *El Centro Zoning & Land Use Map*). The area from 14th Street to Clark Road is built-out with single-family residential (SFR) housing and zoned R-1.

The proposed project is intended to meet existing and projected traffic demand associated with local land use plans. The project area south of I-8 is zoned for future residential development by the "Growth Management Plan" within the *1990 Amended City of El Centro General Plan* (see appendix A, exhibit 13, *El Centro Zoning and Land Use Map*). Actively farmed until about 1985, the largely vacant area south of and adjacent to I-8 between La Brucherie Road and Clark Road is zoned R-1 with a CT/RC (Tourist/Commercial and Regional Commercial) overlay. Lands within the project area in the southwest quadrant are planned for the Farmer's Estates Subdivision residential development. A Final Environmental Impact Report (FEIR) was approved for this project by the city of El Centro in May 1991 and Final Tentative Maps were approved by the El Centro City Council in 2003 (appendix A, exhibit 26, *El Centro Engineering Division Letter*). Southeast of the project area, a number of single-family homes have been constructed and occupied, including the Desert Estates South subdivision (see also figure 1.2-1, *Project Alternatives and Study Area*). A 143 SFR subdivision (Desert Village) is planned and approved just south of the existing Desert Estates South subdivision. Continuing directly southward, there are an existing water treatment facility and vacant areas described on the *City of El Centro El Centro Land Use Map* as intended for School and Park use. Still further south, the Buena Vista Estates Subdivision is approved for the construction of 465 residential units. A portion of this project area has not yet gone to the Local Area Formation Commission (LAFCO) board for annexation (planned subsequent to ongoing fiscal analyses). The northern 32.4 ha (80 ac) of the Buena Vista site are in the Tier I Growth Area of the City's Urban Development Program (appendix A, exhibit 15) within the "Land Use Element" of the *City of El Centro General Plan*. The remaining land is Tier II.

A 2.1 ha (5.3 ac) area identified as a park/retention basin in the approved tentative map for the Farmer's Estates project is included within the proposed interchange reconstruction project area (appendix A, exhibit 14, *Farmers Estates Subdivision Tentative Map*). No parks currently exist south of I-8. However, the amount of city of El Centro parkland currently exceeds the 1.2 ha (2.9 ac)/1000 persons ratio set as a goal in its general plan.

There is a City owned and operated sewer lift station as well as associated Imperial Irrigation District (IID) electrical utility poles located within the southwest quadrant of the interchange project area (see Section 3.15 and appendix A, exhibit 16, *Utilities* for additional details).

Impacts

No substantial impacts to land use would occur. Reconstruction of the interchange north of I-8 will occur entirely within existing R/W. No changes in land use will be produced. Depending on the alternative selected, reconstruction south of I-8 would reduce up to 4.3 ha (10.6 ac) of land available for residential development within the Farmer's Estates Subdivision in the southwest quadrant. Up to 2 ha (5 ac) of land zoned CT/RC for commercial development in the southwest quadrant would be acquired for the project. Areas that would be impacted are currently vacant and have been for several years. A small amount of land (106 m^2 /1150 ft^2) within the path of the proposed overcrossing is currently occupied by a City-operated sewer lift station. This land will be acquired by the Department and the sewer lift station will be relocated to a nearby location.

The proposed "park/retention basin" within the Farmer's Estates Subdivision would be completely impacted by Alternatives 2 and 4. However, the City of El Centro indicated in a letter to the Department dated June 17, 2002 that the city regards the park's primary function to be as a retention basin (appendix A, exhibit 17, *El Centro Parks & Recreation Letter*). Other than for stormwater retention, specific uses for the basin are not listed by the city, though it is reasonable to expect that some beneficial secondary uses could occur within the area proposed for the park/retention basin (such as dog-walking and bicycling). These beneficial secondary uses would be available at a relocated site within the Farmer's Estates project area. Beneficial uses may, in fact, be encouraged where the basin is located more distant from I-8 traffic. The City letter cited above makes it clear the land would not be regarded as being of significance as a local park or for recreation. Therefore, section 4(f) of the Department of Transportation Act (Public Law 89-670-80 Statutes 931) does not apply.

Mitigation

No mitigation for impacts to land use is proposed. The City of El Centro will work with the developer to relocate the park/retention basin site outside the proposed R/W of the interchange reconstruction project in order to meet stormwater runoff requirements for the Farmer's Estates project.

Caltrans will negotiate R/W acquisition costs with property owners in the southwest and southeast quadrants of the project area. The sewer lift station will be relocated by the Department.

3.2 FARMLAND

Affected Environment

The proposed project is located within an area of Farmland of Local Importance, according to mapping prepared by the California Department of Conservation and pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency (appendix A, exhibit 18, *Important Farmland Map*). This mapping system is also utilized by the Natural Resources Conservation Service (NRCS) in making farmland impacts determinations in California. As verified in an email from Steve Hogan (Director of the City of El Centro Public Works Department) to the Department on May 22, 2002, no active farming has occurred in any portion of the project area for at least 10 years. All land within and adjacent to the project area was once farmed but is currently either developed or vacant and graded. Lands within the project area are designated on City Land Use and Zoning Maps as R-1 with a CT/RC overlay. El Centro is a growth-oriented community (appendix A, exhibit 1, *El Centro Development Tier Map*). The *City of El Centro General Plan* contains no agricultural element and no agricultural zoning designations exist on the *City of El Centro Zoning* or *Land Use Maps*.

Impacts

According to §658.2 of the Farmland Policy Protection Act (FPPA)**,** farmland does not include land already in or committed to urban development. Alternatives 2 and 4 impact 1.1 ha (2.7ac) of farmland, as defined by the FPPA. Alternative 1, the No Build Alternative, would impact no farmland. In evaluating impacts to farmland, the federal agency portions of the Natural Resources Conservation Service (NRCS) Form AD 1006 were completed by Department staff pursuant to provisions of the Farmland Protection Policy Act as regulated by the Natural

Resources Conservation Service (NRCS). The FHWA *Guidelines For Implementing the Final Rule of the Farmland Protection Policy Act for Highway Projects* (May, 1989), advises that Form AD 1006 need not be submitted to the NRCS in cases where the site assessment criteria score (Part VI) is less than 60 points for each project alternative. To document compliance with the FPPA, the Department need only complete parts required for federal agencies and place the completed form in the project files (appendix A, exhibit 19, *Form AD 1006*). Site Assessment determinations totaling less than 60 points were made on all alternatives for this project. Alternative 2 would impact 5 hectares (ha)/12.4 acres (ac) of farmland within the project area. Alternative 4 would impact 2 ha (5 ac) and Alternative 5 would impact 4.3 ha (10.6 ac). However, due to the combined factors of planned and approved land uses and lack of irrigation and cultivation over recent years, only 1.1 ha (2.7 ac) of impacted farmland in the southeast quadrant of the project area qualify as farmland (Alternatives 2 and 4).

Mitigation

On a project specific basis, no mitigation for impacts to farmland is proposed. Mitigation for farmland is proposed under cumulative impacts. Please see chapter 4, section 4.1 for a discussion of mitigation for cumulative farmland impacts in Imperial County.

3.3 SOCIAL AND ECONOMIC

The National Environmental Policy Act of 1969, as amended Sec. 101 [42 USC § 4331] directs the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to the extent practicable and to the general welfare, to "…fulfill the social, economic, and other requirements of present and future generations of Americans." Further, 23 United States Code 109(h) requires that the effects of transportation projects upon residences, businesses, tax base, and other community resources be considered during transportation decision making. Federal Highway Administration policy, according to its Environmental Policy Statement of 1994, is to "avoid, minimize, and mitigate to the fullest extent possible the adverse effects of transportation programs and projects on the neighborhood, community, and natural resources."

In order to identify and evaluate potential social and economic impacts related to the proposed project, a Community Impact Assessment (CIA) was completed by Department staff in April, 2002. The CIA involves a discussion of potential social and economic impacts, including environmental justice issues relevant to the evaluation of environmental effects of the proposed interchange reconstruction project. It was determined that the proposed project would produce socioeconomic effects on the environment, but these are not expected to be substantial. Socioeconomic issues, identified impacts, and proposed mitigations are described below. Due to incomplete availability of 2000 Census data at the time of writing, data from both the 1990 and 2000 Census were utilized in the CIA. Public involvement and coordination with the community regarding project design is described in appendix C, Consultation & Coordination. A distribution list for this document is included in appendix G.

3.3.1 ECONOMIC

Affected Environment

Imperial County and El Centro physically connect with adjacent Riverside, San Diego, and Yuma Counties and Mexico via the national and state highway systems on I-8 and Routes 111 and 86. The largest of the seven incorporated cities in Imperial County, El Centro serves as the county seat for Imperial County and is located within the Imperial Valley, one of the most productive farming regions in the nation. El Centro is historically an agricultural and multi-cultural community that also serves as the core of the Imperial Valley's retail district. In addition to moving freight and produce via existing highways, local and regional vendors have access to intermodal rail services to load and unload rail cars that arrive via Union Pacific Railroad. The warm and dry climate with many sunny days enhances the attractiveness of El Centro as a winter tourism and recreation location. Additionally, the border with Mexico and the increases in cross-border movement of goods brought about both by the North American Free Trade Agreement (NAFTA) and cross-border shopping figure prominently in the social and economic environment in the Imperial Valley. Mexicali, a city with about five times the population size of Imperial County, lies south of El Centro immediately across the border from Calexico on Route 111.

El Centro is a pro-business community and is aggressively pursuing a policy of diversified economic growth, led by a strong coalition of local businesses, public agencies, elected officials, and committed citizens. El Centro's commercial base has changed in recent years with the introduction of discount centers and warehouse clubs competing for the cross-border retail spending from residents in neighboring and rapidly growing Mexicali. The *City of El Centro Downtown Revitalization Plan* aims to move the City away from its former position as solely a retail center and towards a more modernized mixed-use center of community activity, culture, arts, and retail trade. The City has worked with a consultant to prepare an economic revitalization plan of its historic downtown central business district.

As part of its economic growth strategy, the city of El Centro has been seeking to be designated as a metropolitan statistical area (MSA) by the state and federal governments in order to receive funds from the state Community Development Block Grant program and other grant programs that disburse funds to local governments based on population. In the 2000 Census, El Centro failed to cross the 50,000-person threshold required for that designation. Commerce and economic investment in the El Centro area are expected to progress at a slower rate until the MSA designation is obtained. Population projections indicate that it is likely that the MSA designation will be achieved by or before 2025.

Within the project area, there is no industrial, agricultural, commercial or retail activity occurring. The southwest quadrant of the interchange project area is zoned and planned for residential development and a portion in the southeast quadrant is zoned and intended for future commercial/retail development (appendix A, exhibits 13, 14, and 15). Residential areas are adjacent to the project area in the southwest, northwest and northeast quadrants of the project area. The area in the southeast quadrant immediately adjacent to the proposed project area is vacant. Ramada Inn and Vacation Inn motels are located adjacent to the project area north of I-8. A commercial development is planned just east of Clark Road and south of I-8 (Wake Avenue Auto Park Subdivision).

Impacts

This proposed project would be expected to contribute to an overall improvement in local and regional economic conditions. No substantial adverse impacts to economic activity are anticipated within or adjacent to the project area. The proposed project would include landscaping of the intersection with an expected "Gateway to the City" theme, which would likely foster local economic benefits. Approximately 2.0 ha (5.0 ac) of land zoned CT/RC in the southeast quadrant would be acquired by the Department for construction of either Alternative 2 or 4. Other than general plan designation and zoning, this land has no approved planning documents for commercial development. However, it has been intended by its owners for future commercial/retail development. Development of the Farmer's Estates Subdivision in the southwest quadrant of the project area would be expected to be reduced from 222 to 190 single family residential units. Areas zoned Residential and CT/RC, immediately southeast and southwest of the proposed project, will have improved access to existing business and commercial centers north of I-8 upon extension of Imperial Avenue southward by others. Reconstruction of the interchange in this context could expedite commercial/retail development within the remainder of the CT/RC area in the southeast quadrant.

An Expert Panel Development Forecasting Workshop was conducted in El Centro on August 21, 2002 for the purpose of compiling information for an Economic Development Corridors Initiative, intended by the Federal Highway Administration (FHWA) to assess socioeconomic impacts of the I-8/Imperial Avenue reconstruction project and other highway projects in Imperial County. Participants included representatives of FHWA, the Department, the city of El Centro, and local public and private economic interests. Consensus at the workshop was that the proposed project would benefit the local community and economy. An official summary of findings is still pending. Further details can be found in appendix C, *Consultation & Coordination*. Please also see chapter 4, section 4.2 for a discussion of cumulative and secondary socioeconomic effects.

Mitigation

No mitigation is proposed for beneficial impacts to economic activity within the project area, locally or regionally. In view of the considerable approved subdivision development within the project vicinity and within the city of El Centro, no mitigation is proposed for impacts to approved housing development.

3.3.2 INCOME AND EMPLOYMENT

Affected Environment

According to the California Employment Development Department figures for the year 2000, the largest employment sector in El Centro was Government, employing 31 percent of employees, followed by Agriculture with 23 percent, and Retail Trade with 17 percent. In addition to over 140,000 residents of Imperial County from which the local workforce is drawn, more than 20,000 people are able to cross the border from Mexicali and legally work in the United States. The median household income in Imperial County in 2000 was $23,359, with 30.3 percent of the population below the poverty level and 14.5 percent unemployed. El Centro is currently not a major center for employment due to limited outside investment in a wider range of industries and employment sectors. Imperial County has historically had the highest unemployment rate in California.

The *City of El Centro General Plan* describes a trend toward intensification and focus of new commercial development oriented toward I-8 and Imperial Avenue. In addition to the downtown redevelopment plan, planned economic development in or just outside of El Centro includes:

- A regional mall near the intersection of I-8 and Dogwood Road
- The El Centro Town Center, to be located north of I-8 on Imperial Avenue and which will include convenience stores, a car dealership, expansion of an existing Walmart, construction of a new Target Store, and the addition of other retail stores
- The expansion of the El Centro Regional Medical Center located on Imperial Avenue, approximately three blocks north of I-8
- Construction of an Imperial County office complex south of I-8 on Fourth Street (Route 86)
- Proposed construction of a major air cargo facility in Imperial County south of I-8

Impacts

No substantial adverse impacts to employees or income are expected to result from any of the alternatives for this project. Reconstruction of the interchange also would not produce permanent interference with the operation and/or existence of any businesses near the project area. Access between local and regional businesses and employment centers north and south of I-8 would be improved with the extension of Imperial Avenue southward by others. Improved access between northern and southern portions of El Centro would contribute positively to the economic environment. The proposed project would create a temporary increase in local employment related to reconstruction of the interchange. Relocation of the sewer lift station would not result in a break in service nor result in job losses.

No businesses or income-producing activities exist or are planned within the project area. As much as 2.0 ha (5.0 ac) of land zoned CT/RC would be acquired in the southeast quadrant. Land acquired for project construction would not substantially reduce land available for economic development citywide or regionally. Please see figure 1.2-1 and the Summary & List of Technical Studies, table S.1, *Summary Of Project Features* for new R/W acquisitions proposed for all alternatives.

Mitigation

No mitigation is proposed.

3.3.3 HOUSING

Affected Environment

The 2000 Census indicates that there are 11,439 households within the City of El Centro, with an average household size of 3.2 persons, and an average family size of 3.7. In that same year, densities of persons per household were about the same as the County on the whole, which had 39,384 households with an average household size of 3.3 and average family size of 3.7. In 2000, 93.3 percent of the City's housing stock was occupied and 6.7 percent was vacant. Vacancy rates countywide were higher, with 89.7 percent of County housing stock occupied and 10.3 percent vacant. Among El Centro's occupied housing units, 5,748 (50.2 percent) were owner-occupied and 5,691 (49.8 percent) were renter-occupied. Countywide, a higher percentage of occupants were owners with 22,975 (58.3 percent) owner-occupied and 16,409 (41.7 percent) renter-

occupied. The City of El Centro has been using density bonuses to expand low and moderate income housing opportunities in the City since 1985. The *City of El Centro General Plan* states objectives for accommodating a fair share of regional housing needs.

In the southwest quadrant of the proposed project area, a 222-unit single-family residence (SFR) subdivision (appendix A, exhibit 14, *Farmer's Estates Subdivision Tentative Map*) is planned, approved, and partially constructed (figure 1.2-1, *Project Alternatives and Study Area*). The Desert Estates South Subdivision southeast of the project location has been constructed (appendix A, exhibit 13, *El Centro Zoning & Land Use Map*). The 143-unit Desert Village SFR subdivision is planned and approved, southeast of the project location and just south of the Desert Estates South Subdivision. The 465-unit SFR Buena Vista Subdivision project is planned for construction just south of Wake Avenue and south of the proposed Desert Village Subdivision project. Only the Farmer's Estates Subdivision is within the project area. All of the above-described subdivisions have existing access to El Centro north of I-8 via overpasses at La Brucherie Road and Eighth Street. Current freeway access to these subdivisions is via local streets to the I-8/Fourth Street interchange to the east or the I-8/ Forrester Road interchange to the west.

Impacts

It is expected that the required R/W for Alternatives 2 and 5 would reduce the number of SFR units constructed within the Farmer's Estates Subdivision (southwest quadrant) by an estimated 32 units of the 222 originally planned for construction. With a 6.7 percent vacancy rate in El Centro and other planned housing construction within the City of El Centro, this reduction of potentially available SFR housing south of I-8 is not expected to substantially reduce available housing, family size, or home ownership rates in the region or City-wide. New R/W requirements in the southeast quadrant of the project area would not impact any existing or planned housing.

Mitigation

No mitigation for impacts to housing availability, family size, or home ownership is proposed. The Department will negotiate the acquisition of land for R/W purposes within the area of the planned Farmer's Estates Subdivision.

3.3.4 GROWTH

It is the Department's policy to design projects that facilitate planned growth in accordance with regional plans and policies. In analyzing impacts to growth by the proposed project, factors considered included:

- Effect on the *overall growth* within the project area
- Effect on the *location of growth*
- Effect on the *rate of growth*
- Potential for removal of an obstacle to growth by providing more direct access or an improved level of service on existing access
- Potential for accommodation of planned growth
- Potential for encouragement of unplanned development
- Potential for promotion of growth in the absence of public services, such as schools, public utilities, and emergency services.

Social, economic, and geographic factors considered in determining potential growth impacts included:

- Market demand for new development
- Availability of other access, existing roads or planned roads

- National and regional economic trends
- Governmental policies
- Climate

Affected Environment

According to the 2000 U.S. Census, California's population increased by 13.6 percent during the decade between 1990 and 2000. Imperial County's population grew from 109,340 to 142,361, an increase of 30.2 percent. During the same period, the City of El Centro's population increased from 31,384 to 37,835, an increase of 20.6 percent. Neighboring cities in Imperial County increased at similar rates between 1990 and 2000 (table 3.3-1), with the exceptions of the City of Calipatria, which nearly tripled in size, and the City of Imperial, which nearly doubled in size.

TABLE 3.3-1 POPULATION INCREASES BY CITY IN IMPERIAL COUNTY

POPULATION OF:	1980	1990	2000	% Change from 1980 – 1990	% Change from 1990 - 2000
Brawley	14,946	18,923	22,052	26.6	16.5
Calexico	14,412	18,633	27,109	29.3	45.5
Calipatria	2,636	2,690	7,289	2.0	171.0
EL CENTRO	23,996	31,384	37,835	30.8	20.6
Holtville	4,399	4,820	5,612	9.6	16.4
Imperial	3,451	4,113	7,560	19.2	83.8
Westmorland	1,590	1,380	2,131	-13.2	54.4
Unincorporated Communities	26,680	27,360	32,773	2.5	19.8
IMPERIAL COUNTY	92,110	109,303	142,361	18.7	30.2

Source: Southern California Association of Governments (SCAG)

Although warm winter temperatures encourage winter tourism in Imperial County, the excessively high summer temperatures (average maximum temperatures June thorough September exceed 100° F) and remoteness serve as discouragements to a high rate of permanent immigration into the El Centro area.

Despite this, projections indicate that strong growth trends will continue in Imperial County, with population expected to rise to 277,543 by 2020, an increase of approximately 95 percent from 2000 population levels. The population of El Centro is forecasted to reach 42,774 by 2020. It is expected that some unincorporated areas where growth will occur will also be annexed by cities, including El Centro. El Centro is centrally located where County-wide population growth and increases in economic activity are expected. The proposed project is at the interchange of an interstate highway and a major arterial that serves not only the local residents of El Centro, but those of the region as well. This intersection is one of two primary access routes to El Centro from San Diego County and Arizona on I-8. El Centro is Imperial County's largest city and is also its social, economic, and governmental center and is, therefore, the transportation focal point of the County. Most areas of Imperial County are largely farmland and open space.

Existing and planned developments with limited direct access to each other and to I-8 characterize the immediate vicinity of the proposed project. Existing developments north of I-8

and the project area are served by numerous local streets, bounded by Ross Avenue on the north, La Brucherie Road on the west, and Clark Road on the east. Existing and planned developments south of I-8 are currently accessible from north of I-8 via La Brucherie Road on the west, Eighth Street on the east, and Wake Avenue on the south. Current freeway access to subdivisions south of I-8 is via local streets to the I-8/Fourth Street interchange on the east or the I-8/ Forrester Road interchange on the west.

The El Centro Urban Development Program proposes a process of phased expansion outside city limits, but within its Sphere of Influence (appendix A, exhibit 15, *El Centro Urban Development Program*). As stated in the *City of El Centro General Plan*, the City's objective is to facilitate residential, industrial, and business growth in areas where public services are available and to provide a variety of growth locations so that an adequate supply of developable land will maintain reasonable housing costs and promote economic development. The plan includes the reconstruction of the Imperial Avenue interchange and overpass, which will connect the northern portions of El Centro with areas south of I-8 along the planned southerly extension of Imperial Avenue by others (appendix A, Exhibit 20, *Letter from Timothy Jones*). The project area as well as the approved Farmer's Estates and Desert Estates South subdivisions are within the El Centro City limits. Access will be improved to an area of undeveloped land south of I-8, a portion of which is outside the City limits and will likely become available for planned residential subdivision and commercial development (the approved 465-unit Buena Vista Subdivision is planned within the Tier I and Tier II growth areas of the El Centro Urban Development Program). Development trends in this area are expected to continue.

Impacts

The extension of Imperial Avenue southward from the interchange is tentatively scheduled for completion at about the same time the interchange reconstruction would be completed in 2006. As much as 2 ha (5 ac) of land zoned CT/RC in the southeast quadrant would be acquired for construction of either Alternative 2 or 4 (figure 1.2-1, *Project Alternatives and Study Area*). The remaining CT/RC area within the quadrant is owned by the Desert Estates Subdivision and is intended for future commercial development. New R/W acquisition for Alternatives 2 and 5 would include land within the southwest quadrant, which is planned for residential development.

The proposed interchange reconstruction cannot be identified as a major impetus of growth for the project vicinity or the City within the context of:

- Existing local and regional plans for future improvements to the arterial system
- Projected population increases for El Centro and the County
- Existing approvals for housing construction and existing zoning for commercial expansion in the project vicinity
- Existing access to areas constructed and planned for development south of I-8
- Development goals and infrastructure provisions in the *City of El Centro General Plan* and *Redevelopment Plan*.

Reconstruction of the interchange would be expected to produce beneficial impacts by correcting design deficiencies and accommodating current and future circulation and access needs within the El Centro city limits (as detailed in chapter 1, section 1.1). Please see chapter 4, section 4.1 for a discussion of cumulative and secondary growth impacts.

Mitigation

No mitigation is proposed.

3.3.5 COMMUNITY CHARACTER

Affected Environment

Cohesive residential communities and a commercial corridor exist along Imperial Avenue and Route 86 to the north of I-8 in El Centro, while mostly vacant land exists to the south. New residential development is planned and approved south of I-8 and an area adjacent to the project area is zoned commercial/retail (CT). As these areas become "built-out", a southern El Centro community will be created, comprised of several subdivision projects with several hundred housing units and possible commercial development along the planned Imperial Avenue extension. This development would be consistent with existing community character north of I-8 and with the *City of El Centro General Plan* and *City of El Centro Redevelopment Plan* goals. The *City of El Centro General Plan* identifies a trend toward intensification and focus of new commercial development oriented toward I-8 and Imperial Avenue, which is identified in the *City of El Centro General Plan* as a City arterial. Although access between the existing northern and planned southern community areas currently exists on overpasses of I-8 on La Brucherie Road to the west of the Imperial Avenue interchange and on Eighth Street and Fourth Street to the east, I-8 (with or without the interchange reconstruction) will continue to constitute a barrier between areas south of I-8 and those north along Imperial Avenue.

Homeless transient populations exist in El Centro and are most likely to be found near the I-8/Fourth Street (Route 86) entrance and exit ramps to the east and in the Adams Park area north of I-8, just south of Route 86. Homeless transients do not commonly reside or frequent the area of the existing I-8/Imperial Avenue interchange area, probably due to the lack of community amenities in the immediate area, physical cover, and access to the north side of I-8.

Impacts

In the vicinity of the I-8/Imperial Avenue Interchange, the No-Build Alternative would perpetuate the physical barrier between the northern and southern sections of Imperial Avenue. Reconstruction of the interchange would provide community continuity along Imperial Avenue north of I-8, linking the proposed El Centro Town Center, the Central Business District, and existing El Centro neighborhoods with the planned residential and potential commercial/retail community to the south. All "build" alternatives would enhance quality of life in El Centro by reducing traffic congestion and out of direction travel between residential areas and schools, libraries, employment locations, and public services. No adverse community cohesiveness or community character impacts are anticipated with any of the "build" alternatives.

No community amenities will be affected by this project. In coordination with the City of El Centro through a cooperative agreement, the interchange would be designed aesthetically and thematically as an attractive "gateway" to the City. Appendix A, exhibit 21 A-D, *Landscaping Concepts* describes some potential concepts and elements that could be utilized in designing the gateway theme. It is not expected that reconstruction and landscaping of the interchange would either displace homeless transient populations or increase the attractiveness of the area as a focal point for habitation or loitering by homeless transients.

Mitigation

No mitigation is proposed for impacts to community cohesiveness, character, or amenities. Noise, landscaping, visual, and bike/pedestrian issues also relate to community continuity and character. For details of these issues, please see section 3.5 Bike/Pedestrian, section 3.7 Noise, and section 3.14 Landscape/Visual for details. The District Landscape Architect will coordinate with the city of El Centro to design landscaping that would enhance the visual quality of the interchange, reduce opportunities for vandalism, and discourage loitering by homeless transients.

3.3.6 PUBLIC SERVICES

Affected Environment

The City of El Centro has two fire stations. A third fire station is planned for the southwest area of the City, south of Ross Avenue to reduce emergency call response times. El Centro Police response times have steadily increased through the period of 1997 through 2001. A police substation (the Posada del Sol Sub Station) is located at 1400 North Imperial Avenue, less than a mile north of the I-8 interchange. Also near the project area, the El Centro Regional Medical Center provides 24-hour emergency services and is located just east of Imperial Avenue on Ross Avenue. Two school districts serve students within the city of El Centro: the El Centro School District and the Central Union High School District. McCabe Elementary School serves students outside the city limits, just southwest of the City. Water and electricity are provided to residential areas in the vicinity by the Imperial Irrigation District (IID). Gas is supplied by the Southern California Gas Company. No water, electric, or gas infrastructure exists within the project area or in adjacent vacant areas. The extension of Imperial Avenue southward will be a joint effort of the city of El Centro and the County of Imperial to be constructed and maintained by both agencies.

Impacts

Access to and mobility for emergency services would improve with the reconstruction of the interchange and the extension of Imperial Avenue, planned by others. No schools would be affected. The project is expected to generally benefit public services in the City and region through improvements in access and reductions in emergency response times.

All planned subdivision developments in the vicinity of the project area are expected to individually or cumulatively affect the capacities of existing schools, utilities, and public services in the city of El Centro. Planned projects south of I-8 are residential subdivisions and have approved environmental documents (EDs), Tentative Maps, and city council approvals.

Mitigation

No mitigation is proposed for impacts to public services. Effects upon public services that result from planned growth in the area are provided for in the *City of El Centro General Plan* and the approved environmental documents for currently planned subdivision developments. Where substantial impacts to public services have been identified in the final environmental documents (FEDs) for these projects, developers are asked to construct infrastructure, the costs of which are partly assumed by developers and partly reimbursed to the developers by the city of El Centro. Please also see section 3.17 of this chapter for issues related to traffic and circulation during construction.

3.3.7 ENVIRONMENTAL JUSTICE

The Community Impact Assessment (CIA) for the I-8/Imperial Avenue Reconstruction Project incorporated the following criteria into the evaluation of potential environmental justice issues associated with this project:

All federal agencies and departments are directed to comply with Executive Order 12898, signed on February 11, 1994, which states: "In accordance with Title VI of the Civil Rights Act of 1964, each Federal Agency shall ensure that all programs or activities receiving Federal financial assistance that affect human health or the environment do not directly, or through contractual or other arrangements, use criteria, methods or practices that discriminate on the basis of race, color, or national origin."

Each federal agency is required to provide opportunities for community input in the NEPA process, including identifying potential effects of and mitigation measures for projects, programs or activities they undertake.

The Department of Transportation's *Final Environmental Justice Strategy,* published on June 29, 1995, outlines various goals and policies for achieving environmental justice in its projects and programs. Specifically, its objectives are to: (1) improve the environment and public health and safety in the transportation of people and goods, (2) coordinate transportation policies and investments with environmental concerns, with consideration of economic and social interests, and (3) consider the interests, issues, and contributions of affected communities, disclose appropriate information, and give communities an opportunity to be involved in decision making.

The Department of Transportation and FHWA have subsequently issued the Department of Transportation "Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" (published in the April 15, 1997 Federal Register, Vol. 62, No. 72) and "FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" (FHWA Technical Advisory 6640.23, December 2, 1998) to ensure compliance with Executive Order 12898.

Affected Environment

According to the 2000 Census, 50 percent of the population in El Centro is white, while 74.6 percent of the total population is also of Hispanic origin (these populations are not mutually exclusive). This breakdown is consistent with the County, which consists of 52.4 percent white, with 72.2 percent also of Hispanic origin. Other ethnicities in both the City and County make up a very small minority of the total population (table 3.3-2).

The median age in El Centro is 30 years old, compared to the median age of Imperial County, which is 31.0 years old. Residents in El Centro who are 65 years of age or older constitute 23 percent of the population, while just 10 percent are in this age category overall in Imperial County.

The Department has coordinated closely with staff of the City of El Centro and Imperial County in considering impacts to all affected groups. Through notice in both English-language and Spanish-language local newspapers, members of the public, various public agencies, and civic groups were provided the opportunity to comment by mail and at a public scoping meeting held June 18, 2002 at the City of El Centro City Council Chambers, an Americans with Disabilities

Act (ADA) compliant facility. A Spanish language interpreter was provided at the scoping meeting. Additional opportunities to comment for all members of the public and agencies will be available during the public review period subsequent to circulation of the Draft Environmental Document (ED) for the proposed project. Substantive comments will be considered and incorporated into the Final Environmental Document (FED) and final project design.

Impacts

No environmental justice impacts would occur with construction or operation of any of the proposed project alternatives. No disproportionate social and economic impacts would be expected to occur to any minority, low-income, age, religious, or disabled groups. Based on the Purpose and Need for the project as described in Chapter 1, the Project Alternatives description as provided in Chapter 2, and the Socioeconomic Analyses provided in this section, planning and construction of all build alternatives would be expected to achieve the Department of Transportation's Final Environmental Justice objectives to:

- improve the environment and public health and safety in the transportation of people and goods
- coordinate transportation policies and investments with environmental concerns, with consideration of economic and social interests
- consider the interests, issues, and contributions of affected communities, disclose appropriate information, and give communities an opportunity to be involved in decision making.

TABLE 3.3-2 HOUSEHOLD POPULATION CHARACTERISTICS

POPULATION PERCENTAGES	EL CENTRO	IMPERIAL COUNTY
White	50%	52.4%
Black	3.5%	4.3%
American Indian and Alaska Native	1.5%	2.4%
Asian	4.1%	2.6%
Native Hawaiian and Other Pacific Islander	.1%	.2%
Other Race	44.6%	41.9%
Hispanic	74.6%	72.2%
Median Age	30	31
65+ Years of Age	23%	10%

Source: U.S. Census Bureau, 2000

The No Build Alternative for the proposed project would exacerbate deficiencies and would not satisfy local and regional planning priorities as described in chapter 1. The reconstruction of the interchange would be expected to produce benefits to the predominantly Hispanic community of El Centro through improved employment opportunities, increased mobility, reduced travel times, improved emergency response times, improvements in community amenities and cohesiveness,

and provisions for noise abatement. All groups, including those defined as minority, low income, age, ethnic, religious, and disabled, would be expected to share in the benefits of the interchange reconstruction project, as detailed above in the Social and Economic section of this chapter.

The proposed project will be an Americans with Disabilities Act (ADA) compliant facility.

Mitigation

No mitigation is proposed for environmental justice issues.

3.4 RELOCATION

With the exception of land occupied by utilities, all other land within the project area is privately owned vacant land or is land within existing R/W. No businesses or residences exist within the project area and none would be displaced as a result of the project. No mitigation is proposed for business or residential relocations. Utilities would be relocated by the Department or by the Imperial Irrigation District to other locations within the project vicinity (please see section 3.15 for details related to utilities).

3.5 PEDESTRIAN AND BICYCLE FACILITIES

A US Department of Transportation (USDOT) Policy Statement on Integrating Bicycling and Walking into Transportation Infrastructure, which was drafted in response to Section 1202 (b) of the Transportation Equity Act for the 21st Century (TEA-21), states "bicycling and walking facilities will be incorporated into all transportation projects unless exceptional circumstances exist" and "the design and construction of new facilities should anticipate likely future demand for bicycling and walking facilities and not preclude the provision of future improvements". Section 1202 of TEA-21 also says that bicyclists and pedestrians shall be given due consideration in the planning process and that bicycle facilities and pedestrian walkways shall be considered, where appropriate, in conjunction with all new construction and reconstruction of transportation facilities except where bicycle use and walking are not permitted. Transportation plans and projects shall also consider safety and contiguous routes for bicyclists and pedestrians.

Affected Environment

Currently, pedestrian and bicycle traffic is not permitted on the existing two-lane bridge at the I-8/Imperial Avenue intersection. Both lanes of the bridge lead either to or from the freeway, where pedestrian and bicycle travel is prohibited and partially limited by a chain link fence. The *City of El Centro Master Bicycle Plan* indicates that a Class II bicycle lane is planned for construction on Imperial Avenue south of I-8.

Impacts

For all "build" Alternatives, two class II .9 m (3.0 ft) bike lanes would exist within two 2.4 m (7.9 ft) shoulders along both the eastern and western sides of the Imperial Avenue overcrossing. All of the "build" alternatives would facilitate bicycle and pedestrian traffic northbound and southbound across I-8, thereby increasing options for travel and recreation within the City. Alternative 2 would require southbound bicyclists and pedestrians to yield at the unsignalized intersection of

Imperial Avenue and the eastbound loop-ramp to I-8. This project would beneficially impact the community through the increase in available modal options and improved access between the northern and southern portions of the City. In a No-Build situation, planned development would still proceed south of I-8, thereby increasing the pressure for pedestrians and bicyclists to illegally cross I-8 at Imperial Avenue.

Mitigation

No mitigation is proposed for impacts to pedestrian and bicycle facilities.

3.6 AIR QUALITY

An Air Quality Analysis was prepared by Department staff for the proposed interchange reconstruction project on 12/8/03 to demonstrate conformity with federal Clean Air Act requirements. The 1990 Federal Clean Air Act Amendments (CAAA) placed new requirements on source and causes of air pollution in areas failing to meet federal air quality standards. The CAAA require substantial reduction from all pollution sources, including pollutants from the transportation sector. The CAAA included more stringent requirements for demonstrating that transportation plans and projects contributed to improvement in air quality, contained in the conformity provisions in Section 176 (a). On Nov. 15, 1993, the EPA published a conformity rule delineating specific criteria and procedures for fulfilling the conformity requirements of the CAAA. This rule was updated, published in the Federal Register August 15, 1997, and became effective September 15, 1997.

Federal Clean Air Act requires that all transportation plans and programs pass the air quality conformity test. This process involves forecasting future emissions of air pollution to determine whether the amount of future pollution resulting from the plan or program would be within the allowable limit for motor vehicle emissions. Project conformity to this forecast is demonstrated by showing that a project comes from a conforming Plan and Program, with substantially the same "design concept and scope" that was used for the regional conformity analysis, that it will not cause localized exceedances of carbon monoxide (CO) and/or PM_{10} (particulate matter) standards, and that it will not interfere with "timely implementation" of Transportation Control Measures identified in the State Implementation Plan.

Transportation conformity must be determined for all non-attainment area pollutants classified as regional pollutants. Under the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has established the National Ambient Air Quality Standards (NAAQS) for six potential air pollutants: carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), suspended particulate matter (PM_{10} & $PM_{2.5}$), sulfur dioxide (SO_2) and lead (Pb). In the Salton Sea Air Basin, those pollutants are PM_{10} and ozone precursors. Transportation projects also generate CO, which is considered a localized pollutant. CO micro-scale modeling is required to determine whether a transportation project would cause or contribute to localized violations of CO National Ambient Air Quality Standards (NAAQS).

Regional conformity must be determined based on a full study at least every 3 years. In California, it is determined at least every 2 years when state-required Regional Transportation (RTP) updates are done. In addition, a new federal Transportation Improvement Plan (TIP) is required every 2 year, for which a conformity determination is required. Amendments to both the plan and Transportation Improvement Plan (TIP) between mandated conformity analysis also

must have conformity demonstrated, including a full-scale revision of the regional analysis if regionally significant projects are added, deleted, or significantly modified.

State regulations, developed by the California Air Resources Board (ARB), mirror federal regulations by establishing industry-specific pollution controls for criteria, toxic, and nuisance pollutants. California also requires that plans and strategies for attaining state ambient air quality standards as set forth in the California Clean Air Act of 1988 be developed throughout the state. The ARB also is responsible for developing motor emissions standards for California vehicles.

The project is located within the Imperial County Air Pollution Control District, which administers air quality regulations developed at the federal, state, and local levels. Federal, state and local air quality regulations applicable to the proposed project are described below.

Affected Environment

The proposed interchange project is located in Salton Sea Air Basin. The mountain ranges that border the air basin near the proposed project affect both the climate and dispersion of air pollutants within the Imperial Valley. Mountain influences on wind directions and speeds contribute to production of atmospheric inversion layers. Temperature inversions occur when the upper air becomes warmer than the air beneath and pollutants become trapped near the earth's surface, preventing their upward dispersal. Inversions occur frequently throughout the year in the Imperial Valley, although they are more prevalent and of greater magnitude in winter.

Sensitive receptors near the project site include residents at motels and housing units. Sensitive receptors are defined as people who are highly sensitive to air pollution exposure. Typically, sensitive receptors occur at residences, health care facilities, schools, and parks. Idle farmland and a sewer lift station occupy much of the project vicinity.

The proposed interchange project is included in the approved Southern California Association of Governments (SCAG) 2001 Regional Transportation Plan (RTP) (Attachment 1). It is also included in the SCAG 2002 Regional Transportation Improvement Plan (RTIP). The Federal Transit Administration (FTA) made a conformity determination on the SCAG RTP in April, 2001 and the RTIP on October 4, 2002. The design concept and scope of the proposed project has not changed from what is included in the RTP and RTIP, therefore the proposed project comes from a conforming transportation plan and program. Regional Particulate Matter 10 (PM_{10}) State Improvement Plan (SIP) budget compliance was accounted for during the RTP and RTIP conformity determinations. The proposed project fully conforms to the improvement plan's purpose of attaining and maintaining national ambient air quality standards.

The proposed project is located in an unclassified/attainment area for federal carbon monoxide standards, and an unclassified area for state carbon monoxide standards. Therefore, hot spot analysis is not required. The proposed project is also located in a non-attainment area for the federal and state Particulate Matter (PM_{10}) standards. Therefore, a local hot spot analysis for PM_{10} for conformity purposes is required. A qualitative PM_{10} hot spot analysis was conducted and the results show that the project improvements would not result in any violation of PM_{10} Federal standards. Compliance with Imperial Valley Air Pollution Control District's (APCD) Rules and Regulations during construction will reduce construction related air quality impacts from fugitive dust emissions and construction equipment emissions to less than significant.

Impacts

According to the *Guidance for Qualitative Project Level "Hot Spot" Analysis in PM-10 Non-attainment and Maintenance Areas, Federal Highway Administration--Office of Natural Environment*, September 2001, when current violations or exceedances in the affected project area cannot worsen an existing violation, a qualitative no-build/build comparison is required at a minimum. This project was qualitatively compared to a current similar project (Brawley Bypass) in the same PM_{10} non-attainment area, where the project was studied and not predicted to experience violations of the PM_{10} standard. It was determined from the qualitative comparison of the two projects that no new PM_{10} sources would be created and no new PM_{10} standard violations would be produced with the reconstruction of the I-8/Imperial Avenue interchange.

Also, in accordance with the *Transportation Project-Level Carbon Monoxide Protocol (CO Protocol),* UC Davis, December 1997, implementing the proposed project should not contribute adversely to air quality. The proposed project would not violate any state or federal carbon monoxide (CO) standards.

No substantial effects related to air quality are expected from the proposed project, including increases in air pollutant emissions or deterioration of ambient air quality. No violation of or inconsistency with Federal, State, or local air standards or control plans would result. Intermittent effects on air movement could be possible with construction of noise abatement structures but would not be expected to be substantial. No objectionable odors would result from the project.

This project is located in Imperial County in the Salton Sea Air Basin. Under federal standards, Imperial County is considered non-attainment with respect to ozone and PM_{10}. Under state standards, Imperial County is considered non-attainment with respect to ozone and PM_{10}.

The proposed interchange project is capacity increasing and therefore is not exempt from the requirement that a conformity determination be made (40 CFR Section 93.126 Table 2). The project is included in both the approved Southern California Association of Governments (SCAG) 2001 Regional Transportation Plan (RTP) and the approved SCAG 2002 Regional Transportation Improvement Plan (RTIP). The design concept and scope of the proposed project are consistent with assumptions contained in the regional emission analysis. The project also does not interfere with the timely implementation of Traffic Control Measures (TCMs).

Table 3.6-1 Emissions Analyses

	CO	O_3	PM_{10}	$PM_{2.5}$	NO_2	SO_2	H_2S
Federal	U/A	N	N/M	A	A	A	NFS
State	U	N	N	A	U	A	U

U=unclassified
M=moderate
A=attainment
N=non-attainment
NFS=no federal standard

Carbon Monoxide Analysis: The project is located in an unclassified/attainment area for the federal carbon monoxide standard. Caltrans' Transportation Project Level Carbon Monoxide Protocol for local analysis was used to determine the proposed project's CO impacts. A Level 7 analysis (in Figure 3 of the protocol) was used due to Imperial County's designation as an unclassified area for CO. Three questions must be satisfied for question 1 of the Level 7 analysis:

a) Project does not significantly increase cold start percentage (less than 2%)

b) Project does not significantly increase traffic volumes (less than 5)
c) Project improves traffic flow

A qualitative screening is performed to check each of these conditions. If all three conditions are satisfied, the project does not require additional air quality analysis.

For condition (a), the project would not result in an increase in nearby retail activity. Therefore, it would not significantly increase vehicles operating in cold-start mode. For conditions (b) and (c), the project does not increase traffic volumes on the roadways. Furthermore, with the improvements made the project would improve traffic flow.

Therefore, based on the above analysis no significant local impacts would occur as a result of the proposed project.

Particulate Matter Analysis: This project is located in a nonattainment area for the federal particulate matter standard for PM_{10}. Therefore, the proposed project is subject to hot spot analysis requirements for PM_{10} in light of the PM_{10} nonattainment or maintenance area (for federal standards) status for purposes of transportation conformity.

Quantitative Analysis: Since EPA has not released modeling guidance on how to perform quantitative PM_{10} hot-spot analysis, such quantitative analysis is not currently required.

Qualitative Analysis: The monitoring station located in El Centro at 150 9^{th} St, has registered violations in the last three years (See attachment 5). Currently, farming activities, high winds and re-entrained road dust are the primary sources of PM_{10} emissions in this area. Vehicle miles traveled (VMT) is not expected to increase because of this project, and therefore fugitive PM_{10} emissions from road dust is not expected to increase.

From this analysis, it I determined that no impact on PM_{10} emissions or concentrations would result from the project, and no further analysis is needed. The proposed project would not create a new violation or worsen an existing violation of the PM_{10} National Ambient Air Quality Standard (NAAQS).

Mitigation

No substantial effects related to air quality are expected from the proposed project, including increases in air pollutant emissions or deterioration of ambient air quality. The project as proposed would not create a new violation or worsen an existing one. Therefore, no mitigation measures are proposed.

3.7 NOISE

A Noise Study Report (NSR) and a Noise Abatement Decision Report (NADR) have been completed by the Department in order to comply with Title 23, Part 772 of the Code of Federal Regulations, "Procedures for Abatement of Highway Traffic Noise." These reports are consistent with the noise analysis policy described in "Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects (Protocol)" (California Department of Transportation 1998). The Protocol specifies the policies, procedures, and practices to be used by agencies that sponsor new construction or reconstruction projects. Noise abatement criteria (NAC) specified in

the Protocol are the same as those specified in 23 CFR 772. The final project design must also meet the requirements of Chapter 1100 of the *Highway Design Manual.*

Transportation projects affected by the Protocol (Type 1) require noise assessments. Type 1 project characteristics, as defined in 23 CFR 772, are proposed federal or federal-aid highway projects for the construction of a highway on a new location or the physical alteration of an existing highway that significantly changes either the horizontal or vertical alignment or increases the number of through traffic lanes. The Department extends definitions within the Protocol to include state-funded highway projects.

Where traffic noise impacts are identified, noise abatement must be considered for feasibility and reasonableness as required by 23 CFR 772 and the Protocol. The feasibility of a noise abatement measure is defined as an engineering consideration. To be considered feasible, a minimum of 5 dBA noise reduction must be achieved at the impacted receptors for the proposed abatement, as described in the Protocol. Other factors may also restrict feasibility, including topography; access requirements for driveways and ramps, presence of local cross streets, other noise sources in the area, and safety considerations.

The determination of reasonableness of noise abatement is considered more subjective than the feasibility criterion. The overall reasonableness of noise abatement is determined by considering a number of factors, such as cost; absolute noise levels; change in noise levels; noise abatement benefits; date of development along the highway; environmental impacts of abatement construction; opinions of affected residents; input from the public and local agencies; and social, legal, and technological factors. If the abatement can be constructed for a reasonable cost allowance, the preliminary reasonableness decision will be to provide abatement. The final decision is determined after environmental impacts and public input are considered.

Affected Environment

Noise in the vicinity of the project emanates predominantly from vehicular traffic traveling on I-8, and to and from I-8 on the freeway ramps at Imperial Avenue. Noise-sensitive uses in the project area that could be affected by the proposed project include single-family residences, an apartment complex, and hotels adjacent to I-8 and Imperial Avenue. Several businesses are also located on both sides of Imperial Avenue in the northeast and northwest quadrants. This area is zoned as Office Professional and is considered Activity Category C land use (table 3.7-1, *Activity Categories and NAC*).

A residential subdivision (Desert Estates) southeast of the project area is surrounded by a masonry wall (see appendix A, exhibit 22, *Noise Monitoring & Modeling Locations*). No development or sensitive receptors exist or are currently planned within the vacant area situated between this subdivision and the freeway in the southeast quadrant. In the southwest quadrant of the project area, several single-family houses on Barbara Way have been constructed and occupied as a portion of a planned private subdivision (Farmer Estates). An existing soundwall located on private property provides noise reduction to these residences. The unconstructed portion of the subdivision is currently vacant land and has no existing soundwall. The *Final Environmental Impact Report (FEIR) for the Farmer Estates Residential Subdivision*, prepared by the City of El Centro in May 1991, proposed the construction of a 5.5 m (18 ft) sound wall for the entire subdivision. The developer of the subdivision, in accordance with the 1991 EIR, will be required to construct additional walls to abate existing and future noise impacts in conjunction with completion of the subdivision project (see appendix A, exhibit 25, *City Resolutions*).

TABLE 3.7-1 ACTIVITY CATEGORIES AND NOISE ABATEMENT CRITERIA (NAC)		
Activity Category	**NAC, Hourly A-Weighted Noise Level, dBA-Leq(h)**	**Description of Activities**
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67 Exterior	Picnic and recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above
D	—	Undeveloped lands
E	52 Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

Source- FHWA 23CFR 772

Impacts

Traffic noise impacts were identified by determining whether 2025 design-year noise levels would approach or exceed the FHWA noise abatement criteria (NAC), which defines a substantial noise increase as being at 12 dBA or greater than existing conditions. The Protocol also defines that a sound level is considered to approach the NAC when the sound level is within 1 dBA of the NAC identified in 23 CFR 772. For example, a sound level of 66 dBA is considered to approach the NAC of 67 dBA for Category B, but 65 dBA is not. Based on the results of the NSR, 2025 traffic noise levels are predicted to approach or exceed the NAC in residential areas (table 3.7-2, *Summary of Existing Noise Levels and Traffic Noise Modeling Results*). Predicted traffic noise for the modeled and monitored receptors under 2025 design-year conditions ranges from 59 dBA to 70 dBA. Predicted increases in traffic noise under 2025 design-year conditions relative to existing conditions typically are in the range of 1-5 dBA. These increases are attributed to predicted increases in traffic volumes and capacity associated with reconstruction of the interchange. Noise effects produced by all three "build" alternatives in both the northeast and northwest quadrants would be equal due to no differences in ramp configuration.

Noise-sensitive receptors (single-family residences and a hotel) in the northwest and northeast quadrants of the project area were monitored and/or modeled and it is determined that these would be expected to experience noise increases subsequent to reconstruction of the interchange (appendix A, exhibit 22, *Noise Monitoring & Modeling Locations*). In the southeast quadrant, traffic noise impacts are predicted not to occur. Tables 3.7-3, 3.7-4, and 3.7-5 indicate monitored and modeled results.

Traffic noise impacts are not predicted to occur at any existing or proposed commercial locations in the project area. The 2025 design-year modeling results indicate that noise levels in commercial areas will not approach or exceed the Activity Category C noise-abatement criteria (NAC) of 72 dBA-L_{eq}(h), nor will noise levels increase substantially. The predicted noise level for outdoor areas in the vicinity not subject to frequent human use, such as the parking lot of the

Ramada Inn Hotel, is 59 dBA and does not approach the NAC. The noise reduction for interior use with windows closed at a hotel with air-conditioning is approximately 12 to 25 dBA. Therefore, interior traffic noise impacts are not predicted to occur at the Ramada Inn site. However, traffic noise impacts are predicted to occur at other Activity Category B land uses and noise abatement must be considered.

Abatement

As stated in the Protocol, noise abatement is only considered where noise impacts are predicted, where frequent human use occurs, and where a lowered noise level would be beneficial (tables 3.7-3, 3.7-4, and 3.7-5 *Predicted Noise Reduction Levels*). Traffic noise impacts have been identified for all "build" alternatives and noise abatement must be considered.

As directed in the Protocol, feasibility and reasonableness determinations have been made for proposed noise abatement measures before final recommendations are made. Public input regarding proposed noise abatement measures was received during a public scoping period that extended from June 18, 2002 to July 2, 2002. Public input was also received from nine respondents to a survey conducted by the Department's Environmental Division in District 11. Public input received expressed agreement with the proposed noise abatement measures. This input will be considered in the final design of noise abatement measures.

No noise abatement is proposed for the southwest quadrant of the project area. The city of El Centro reviewed and deemed adequate the May 1991 Final Environmental Impact Report for the Farmer's Estates Subdivision, which requires the developer to provide noise abatement in this quadrant of the project. The FEIR requires the developer to build an 18-feet-high wall along I-8 as noise abatement. On September 18 1991, the city of El Centro also adopted City Council Resolution No. 91-56, which contains El Centro Planning Commission Resolution No.91-24 (appendix A, exhibit 25, *City Resolutions*), requiring that "a sound barrier, at a minimum height of eleven (11') feet, shall be constructed along the northern perimeter of the site."

Proposed abatement measures meet the Department's criterion for feasibility, which requires a minimum of 5 dBA noise reduction at impacted receptors and interception of the line-of-sight to heavy truck exhaust stacks.

For any of the evaluated barriers to be considered reasonable from a cost perspective, the total estimated cost of the barrier must be equal to or below the total allowance calculated for that barrier as per the Protocol. The cost calculations of the barriers are based on all items appropriate and necessary for the construction of the barriers, such as traffic control, drainage modification, and retaining walls. The decision to include barriers in the project design was based on this information and other information contained in the NSR, the final project design, and the NADR.

Three reasonable noise abatement barrier alternatives were developed and considered, but only one alternative per quadrant is proposed (see table 3.7-6, *Summary of Reasonableness Analysis Results*). Proposed locations for abatement are shown in appendix A, exhibit 22, *Noise & Modeling Locations*. All three noise abatement alternatives considered were found to be feasible and all involve either the construction of soundwalls or a soundwall/berm combination on the

1.1.1 TABLE 3.7-2 SUMMARY OF EXISTING NOISE LEVELS AND TRAFFIC NOISE MODELING RESULTS

Receptor	Location	Type of Development	Number of Units Represented	Noise Abatement Category *	Measured Existing Worst-Noise-Hour Noise Level **	Predicted existing Worst-Noise Hour Noise Level 2001 **	Predicted future Worst-Noise-Hour Noise Level 2025 **	Noise Increase **	Impact Type
M1	1697 Southwind Dr.	residence	3	B	64	65	68	3	A/E
M2	2170 Smoketree Circle	residence	2	B	63	64	65	1	N
M3	2173 11th St.	residence	2	B	66	68	70	2	A/E
M4	2170 11th St.	residence	1	B	66***	66	68	2	A/E
M5	2169 Smoketree Ct.	residence	2	B	67	66	68	2	A/E
M6	Ramada Inn	hotel	NA	B	59	58	59	1	N
M7	Barbara Way & 19th St.	residence	8	B	53***	53***	56***	3	N
M8	300' East of Barbara Wy	residence	NA	B	61	65	69	4	A/E
M9	North of Whitney Rd	commercial	NA	C	56	63	65	2	N
1	Southwind Dr. 1	residence	4	B	--	64	68	4	A/E
2	Southwind Dr. 2	residence	4	B	--	64	69	5	A/E
3	Southwind Dr. 3	residence	4	B	--	65	68	3	A/E
4	Southwind Dr. 4	residence	5	B	--	65	67	2	A/E
5	Allen Dr.	residence	2	B	--	63	65	2	N
6	14 th St.	residence	4	B	--	59	60	1	N
7	Smoketree Crt.	residence	3	B	--	66	67	1	A/E
8	Cypress Dr. Crt.	residence	2	B	--	67	69	2	A/E
9	9 th St.	residence	4	B	--	66	68	2	A/E

***** **Table 3.7-1**

****** expressed as **dBA-L_{eq}[h]**

******* noise measurement taken/predicted behind private soundwall

NA - Not Available

M1 - M9 indicate measured and modeled receptor locations

1 – 9 indicate modeled receptor locations only

M7 & M8 – City requires private developer to provide noise abatement per FEIR

A/E - Approach or Exceed NAC

N - No impact

See Appendix A, Exhibit 21, *Noise Monitoring/Modeling Locations*

TABLE 3.7-3 PREDICTED NOISE REDUCTION LEVELS WITH SOUNDWALLS AT EDGE OF SHOULDER (Not Proposed)

			No Barrier	2.44 m (8 ft) Wall		3.05 m (10 ft) Wall		3.65 m (12 ft) Wall		4.27m (14 ft) Wall	
Area Quadrant	Barrier	***Receptor***	Predicted Worst Noise Hour Noise Level *	Predicted Noise Level *	Predicted Noise Reduction *	Predicted Noise Level *	Predicted Noise Reduction *	Predicted Noise Level *	Predicted Noise Reduction *	Predicted Noise Level *	Predicted Noise Reduction *
		1	68	66	2	64	4	63	5	62	6
		2	69	66	3	65	4	64	5	62	7
Area 1 NW	***NW-1***	3	68	65	3	63	5	62	6	60	8
		4	67	63	4	61	6	60	7	59	8
		5	65**	61	4	60	5	58	7	57	8
		M1	68	64	4	59	5	61	7	60	8
		M2	65**	60	5	58	7	57	8	56	9
		M3	70	67	3	66	4	64	6	62	8
		M4	68	66	2	65	3	63	5	62	6
Area 2 NW	NE-1	M5	68	65	3	64	4	63	5	61	7
		7	67	64	3	63	4	62	5	60	7
		8	69	66	3	65	4	64	5	62	7
		9	68	64	4	63	5	61	7	60	8
Area 3 SW	SW-1	M8	69	66	3	65	4	64	5	63	6

* expressed as **dBA-L_{eq}[h]**
** no noise impact
Bold numbers indicate 5dBA or more noise reduction

M1 - M9 Indicate measured and modeled receptor locations
1 - 9 Indicate modeled only receptor locations
M8 City requires private developer to provide noise abatement per FEIR

See Appendix A, Exhibit 21, *Noise Monitoring/Modeling Locations*

TABLE 3.7-4 PREDICTED NOISE REDUCTION LEVELS WITH SOUNDWALLS AT RIGHT OF WAY LINE (Proposed for Northwest Quadrant)

			No Barrier	2.4 m (8 ft) Wall		3 m (10 ft) Wall		3.7 m (12 ft) Wall		4.3 (14 ft) Wall		
Area Quadrant	Barrier	***Receptor***	Predicted Worst Noise Hour Noise Level *	Predicted Noise Level *	Predicted Noise Reduction *	Predicted Noise Level *	Predicted Noise Reduction *	Predicted Noise Level *	Predicted Noise Reduction *	Predicted Noise Level *	Predicted Noise Reduction *	Considered & Proposed Barrier Height
Area 1 NW	NW-2	1	68	66	2	64	4	62	6	61	7	***Considered & Proposed*** 3.7-4.3 m (12-14 ft)
		2	69	66	3	65	4	63	6	62	7	
		3	68	67	1	66	2	64	4	62	6	
		4	67	65	2	64	3	62	5	61	6	
		5	65**	64	1	63	2	61	5	60	5	
Area 2 NE	NE-2	M1	68	66	2	65	3	64	4	62	6	Considered & Not Proposed 3.7-4.3 m (12-14 ft)
		M2	65**	64	1	62	3	60	5	59	6	
		M3	70	69	1	67	3	65	5	63	7	
		M4	68	67	1	66	2	65	3	63	5	
		M5	68	66	2	65	3	63	5	62	6	
		7	67	66	1	65	2	64	3	62	5	
		8	69	68	1	67	2	65	4	63	6	
		9	68	66	2	64	4	63	5	61	7	
Area 3 SW	SW-2	M8	69	66	3	64	5	63	6	61	8	Considered & Not Proposed 3 m (10 ft)

* expressed as **dBA-L_{eq}[h]**

** no noise impact

Bold numbers indicate 5dBA or more noise reduction

M1 - M9 Indicate measured and modeled receptor locations

1 - 9 Indicate modeled only receptor locations

M8 City requires private developer to provide noise abatement per FEIR

See Appendix A, Exhibit 21 *Monitoring/Modeling Locations*

1.1 TABLE 3.7-5 PREDICTED NOISE REDUCTION LEVELS WITH BERM/WALL COMBINATION AT 5 M (16 FT) FROM HINGE LINE (Proposed for Northeast Quadrant)

			No Barrier	2.4 m (8 ft) Berm/Wall Combination		3 m (10 ft) Berm/Wall Combination		3.7 m (12 ft) Berm/Wall Combination		4.3 m (14 ft) Berm/Wall Combination		
Area Quadrant	Barrier	***Receptor***	Predicted Worst Noise Hour Noise Level *	Predicted Noise Level *	Predicted Noise Reduction *	Predicted Noise Level *	Predicted Noise Reduction *	Predicted Noise Level *	Predicted Noise Reduction *	Predicted Noise Level *	Predicted Noise Reduction *	Proposed Barrier Height
Area 2 NE	***NE-3***	M2	65**	60	5	59	6	58	7	56	9	3.7 m (12 ft)
		M3	70	66	4	64	6	62	8	60	10	
		M4	68	65	3	64	4	62	6	60	8	
		M5	68	65	3	63	5	61	7	60	8	
		7	67	65	2	63	4	62	5	60	7	
		8	69	65	4	64	5	62	7	60	9	
		9	68	64	4	63	5	61	7	59	9	

* expressed as **dBA-L_{eq}[h]**
** no noise impact
Bold numbers indicate 5dBA or more noise reduction

M1 – M5 Indicate measured and modeled receptor locations
7 - 9 Indicate modeled only receptor locations
M8 City requires private developer to provide noise abatement per FEIR

See Appendix A, Exhibit 21 *Monitoring/Modeling Locations*

north side of I-8. Considered and proposed barriers extend from La Brucherie Road to the westbound I-8 on-ramp at Imperial Avenue and from Eighth Street to the westbound I-8 off-ramp at Imperial Avenue.

The first barrier alternative would construct the soundwalls on the edge-of-shoulder on the freeway and ramps. This alternative was found to be reasonable only for the northwest quadrant of the project area. A second alternative would construct barriers at the R/W line of the project and was found to be reasonable for only for the northwest quadrant. In some cases, the Department has proposed this alternative over a soundwall at-the-edge-of-shoulder in order to minimize visual impacts, and to address safety, maintenance, traffic, and landscaping issues. Both "shoulder" and "R/W line" noise abatement alternatives would reduce noise impacts at 22 residential units on the west side of Imperial Avenue and 16 on the east side. A third alternative involved abatement in the northeast quadrant, which was found to be reasonable only for a berm/soundwall combination within existing R/W. Per residents' input, the berm would be extended to the Eighth Street overcrossing embankment for visual continuity and safety reasons.

In accordance with the criteria and results described above, the Department has proposed the following abatement measures (see appendix A, exhibit 23, *Considered and Proposed Sound Barrier Options* and exhibit 21, *Noise Monitoring & Modeling Locations* for station numbers):

- A sound berm/sound wall combination in the northeast quadrant would benefit 16 residences with a total cost of $439,173 compared to a reasonable allowance of $496,000. The masonry wall on top of the berm would be 580 m (1903 ft) in length. The earthen berm would be an estimated volume of 2934 m^3 (103,600 ft^3). Combined wall/berm height would be 3.7 m (12.1 ft). This barrier would be constructed in the northeast quadrant within existing R/W from station # 606 + 60 to 612 + 40. The berm would be located 4 m (13 ft) off the edge-of-shoulder. The berm/wall alternative would provide an area for landscaping on the slopes of the berms and would minimize visual impacts. This alternative is also preferred by residents according to input received during the public scoping meeting held June 18, 2002 in the City Council Chambers at the El Centro City Hall.

  A space between the Department R/W line and the wall on top of the berm would be created with the proposed noise abatement in the northeast quadrant of the project area (please see appendix A, exhibit 22, *Noise Monitoring & Modeling Locations*). This space would be used by the Department for maintenance of the berm/wall R/W area and would not be visible from the freeway. Access would be controlled through fences, locked maintenance gates, and landscaping to discourage potential use of the area by homeless transients.

- A wall at the existing R/W line in the northwest quadrant would benefit 22 residences with a total cost of $629,000 compared to a reasonable allowance of $726,000. The masonry wall would be an average of 3.9 m (12.8 ft) in height and would be 680 m (2231 ft) in length. This barrier would be constructed in the northwest quadrant from station # 596 + 80 to 603 + 60. The wall would be located 4 m (13 ft) off the edge-of-shoulder. This barrier alternative would minimize visual impacts and would address safety, maintainability, traffic, and landscaping. It is expected that in the northwest quadrant approximately 25 centimeters (cm)/10 inches (in) of Department R/W will exist between the noise abatement wall and the R/W line subsequent to construction. Agreements will be sought by the R/W Division to assign responsibility for maintenance of the north side of the noise abatement wall to adjacent private landowners.

- The minimum distance from the toe of the proposed noise abatement to the edge of traveled way (ETW) is approximately 11.2 m (36.7 ft) in the northwest quadrant, and 4.9 m (16.1 ft) in the northeast quadrant. The project as proposed meets the Highway Design Manual minimum distance guideline for horizontal clearances and does not require a design exception.

No substantial noise impacts are expected as the result of this project with application of the Protocol, 23 CFR 772, and construction of noise abatement measures as described above. If pertinent parameters change substantially during the final project design, the preliminary noise abatement design may be changed or eliminated from the final project design. The final barrier design and decision to install barriers would be based on the FED, final project design, and the public involvement process. Please see section 3.17 of this chapter for a discussion of construction-related noise impacts.

TABLE 3.7-6 SUMMARY OF REASONABLENESS ANALYSIS RESULTS

Location by Project Quadrant	Abatement Strategy	Sound Barrier Height/Length	Reasonable Allowance ($)	Estimated Cost ($)	CONCLUSION & Recommendation
NORTHEAST	ES* masonry wall	H: 3.7 m (12.2 ft) L: .58 km (.36 mi)	496, 000	536,500	Not Reasonable/ Don't Build
NORTHEAST	R/W masonry wall	H: 3.7-4.3 m (12.2-14.1 ft) L: .58 km/ .36 mi	496,000	459,360	Reasonable/ Do Not Build
NORTHEAST	R/W masonry wall/berm	H: 3.7 m/12 ft L: .58 km/ .36 mi	496,000	440,000	Reasonable/Build
NORTHWEST	ES masonry wall	H: 3.7 m/12.2 ft L: .68 km/ .42 mi	726,000	629,000	Reasonable/ Don't Build
NORTHWEST	R/W** masonry wall	H: 3.7-4.3 m/12.2-14.1 ft L: .68 km/ .42 mi	726,000	530,400	Reasonable/Build

* ES: edge of shoulder ** R/W: Right-of-way line H: height L: length

See appendix A, exhibit 21 *Monitoring/Modeling Locations*

3.8 WATER QUALITY, HYDROLOGY, STORMWATER RUNOFF

A water quality study for this project was completed by the Department on October 30, 2001.

Affected Environment

No surface water bodies or natural drainages exist within or near the vicinity of the project location. Regionally, this project is located within Hydrologic Unit 723.10 (Imperial Valley). The water bodies within this hydrologic unit are: Alamo River, Imperial Valley Drains, New River, Ramer Lake, Wiest Lake, and the Wister Unit. These waterbodies drain into the Salton Sea and contain 303(d) pollutants, including those listed below:

- Alamo River pollutants: selenium, pesticides, and sedimentation/siltation.

- Imperial Valley Drains Pollutants: selenium, sedimentation/siltation, and pesticides.
- New River pollutants: sedimentation/siltation, bacteria, nutrients, volatile organic compounds (VOCs), and pesticides.
- Salton Sea pollutants: salinity, nutrients, and selenium.

Drainage from the existing interchange area does not contribute substantially to pollutant levels in the above-mentioned regional water bodies.

The proposed project is located within the Imperial Valley, which is underlain with very deep silty, wet clay. This soil is characteristic of floodplains, basins, and lakebeds. Subsurface investigations made during the years from 1999 to 2001 indicate groundwater levels in the project area are approximately 2.3 m (7.5 ft) to 2.6 m (8.5 ft) below the existing ground surface. Groundwater throughout the Imperial Valley Hydrologic Unit is generally considered poor and unusable for municipal and agricultural purposes. Groundwater levels in the region may fluctuate according to variances in agricultural irrigation practices and precipitation.

The freeway and slopes of the existing interchange drain mostly into unlined ditches and depressions within the vicinity (appendix A, exhibit 8, *Existing Drainage General Flow*). Some drainage percolates but, during periods of heavy storms, runoff floods properties to the north of I-8.

The drainage features at the current interchange do not prevent flooding in the vicinity. Most of the paved areas do not employ dikes and rain is allowed to sheet-flow off the roadway onto the shoulders and into unlined ditches and depressions. Some of this water infiltrates, but during heavy rains, ponding occurs. Flooding occurs on the properties to the north of the freeway during significant rains due to lower ground elevation than that of the adjacent state right of way (R/W). Some runoff also reaches adjacent properties on the south side of the interchange. The Department currently delivers water from low spots to Imperial Irrigation District (IID) drainage facilities on the north side of the freeway and to the Date Drain (also IID) south of I-8 via a 457 mm (18 in) pipe. The Date Drain (figure 1.2-1, *Project Alternatives and Study Area*) is an unlined facility that contains drainage from adjacent farmlands and transports water ultimately to the Salton Sea. Also, some runoff reaches IID drains near the eastern limit of the project. Most of the runoff ponds in several low points, but no specific infiltration areas exist.

Impacts

The project would be expected to disturb soil conditions and increase impervious surface area per alternative as follows:

- Alternative 2 – 16.3 ha (40.4 ac) of disturbed soil and approximately .5 ha (1.2 ac) of additional impervious area.

- Alternative 4 – 12.8 ha (31.7 ac) of disturbed soil and approximately .7 ha (1.7 ac) of additional impervious area.

- Alternative 5 – 15.7 ha (38.8 ac) of disturbed soil and approximately .4 ha (1 ac) of additional impervious area.

Within the project area, the Date Drain will be reconstructed underground with new water pipe connections in order to accommodate the interchange reconstruction. The installation of two

concrete manholes will be required (appendix A, exhibits 10,11,and 12). During periods of heavy rainfall, some water would reach IID facilities but would not be expected to exceed current capacities nor contribute to an adverse impact to water quality.

The project will increase impervious area and volume of surface runoff. However, with implementation of measures as described in the Mitigation section below, no adverse impacts to local or regional surface or groundwater quality would be expected from the reconstruction of the interchange.

Mitigation

The proposed project would alleviate freeway and slope drainage that ponds at the northeast and northwest corners of the interchange. All proposed design alternatives would eliminate flooding to the residential and commercial properties along the north side of the freeway by channeling flow to a drain system proposed along the bottom of the interchange slopes (appendix A, exhibits 10-12). Runoff will infiltrate within proposed ditches and basins, with some flow reaching IID drains. Flow volume into the IID drains will not exceed current potential volume. Infiltration basins and earthen ditches will be used in all quadrants to maximize the infiltration of water.

A Storm Water Pollution Prevention Plan (SWPPP) will be prepared as the Special Provisions of the construction contract and will be subject to approval of the Resident Engineer (RE). The project shall be designed and constructed in conformance with the National Pollutant Discharge Elimination System (NPDES) and *Caltrans Storm Water Quality Handbook* requirements. Best Management Practices (BMPs) would also be implemented. If short-term dewatering should be necessary for reconnection of the Date Drain pipe within project limits, appropriate permits shall be obtained from the Regional Water Quality Control Board, which shall be consulted for proper dewatering and disposal methods. A determination of the need for dewatering will be made subsequent to further geotechnical analysis. Please see section 3.17 of this chapter for details on construction-related drainage and water quality issues.

3.9 WETLANDS AND WATERS OF THE U.S.

A determination regarding potential impacts to wetlands was completed by Department personnel on September 12, 2001 subsequent to the biological field review of the project area conducted on September 4, 2001.

Affected Environment

The Date Drain (IID) is located parallel to I-8, south of the freeway. Drainage from adjacent farmlands is transported via the Date Drain ultimately to the Salton Sea (Figure 1.2-1, *Project Alternatives and Study Area*). This drain has a natural bottom and supports annual grasses along its banks. It is regularly maintained and generally contains little to no vegetation; however, it may support vegetation prior to being cleared or dredged during IID maintenance operations. The *U.S. Army Corps of Engineers (USACOE) Wetland Delineation Manual* (1987) cautions that agricultural drains with wetland vegetation may constitute "man-induced wetlands" by definition and may be subject to Section 404 of the Clean Water Act. The manual further cautions that if hydrophytic vegetation is being maintained only because of man-induced wetland hydrology that would no longer exist if the activity (e.g. irrigation) were to be terminated, the area should not be considered a jurisdictional wetland. According to the USACOE, the Date Drain fails to meet the

definition of jurisdictional wetlands or "waters of the U.S." and so does not fall under the regulation of the USACOE (please see appendix A, exhibit 27, *Corps of Engineers Letter*). Additionally, the drain is cleaned and maintained by IID on a regular basis and so does not fall under the jurisdiction of the California Department of Fish and Game (CDFG). No other potential wetlands or "waters of the U.S." have been identified within the project vicinity.

Impacts

No impacts to wetlands or "waters of the U.S." would occur and no mitigation is proposed.

3.10 BIOLOGY

Department personnel completed a biological evaluation of the project on September 12, 2001, subsequent to the biological field review of the project area conducted on September 04, 2001.

Affected Environment

The majority of the project area north of I-8 is developed primarily with commercial and residential uses. The areas to south of I-8 have been actively farmed until 1985 and are now primarily vacant dirt parcels, with some developed residential subdivisions outside the project limits. The area immediately surrounding the interchange consists of bare dirt slopes landscaped with tamarisk (Tamarix sp.), eucalyptus and small California fan palms (Washingtonia filifera). The biological resource that occurs within the project area is the sensitive Western Burrowing Owl (Athene cunicularia), protected under the Migratory Bird Treaty Act. Approximately five burrowing owl burrows and three owls were observed on the dirt berms surrounding the interchange and bridge abutments on the southeast side of I-8.

Impacts

The District biologist has determined that no substantial impacts to biological resources would be expected from this project as planned if the conditions described in the Mitigation section below are implemented. This determination included consideration of endangered and threatened species lists provided by the U.S. Fish & Wildlife Service (USFWS) to the Department (appendix A, exhibit 28, *USFWS Species List*).

Burrowing owls and their burrows would be impacted by all of the "build" alternatives chosen for consideration. The District biologist has additionally determined that the relatively small number of owls affected by the proposed project and the overall availability of suitable habitat in the region precludes a cumulative impact to owls.

No change in the diversity of species or number of any species of plants or animals within the vicinity of the proposed project area would occur. No impacts to any unique, threatened or endangered species of plants or animals would result from construction of the project nor would there be any removal of critical habitat. No introduction of new species of animals into the project area nor creation of a barrier to movement of animals would result. Department biology staff will require notification of any changes or additions made to the construction plans.

Mitigation

Mitigation for the sensitive Western Burrowing Owl would be construction-related and would include limitations on the timing of construction (during the breeding season of this species) and/or exclusion of owl burrows during the non-breeding season and prior to construction. The preferred mitigation for impacts to burrowing owls is to establish a construction window that would avoid any work during the breeding season (February 1 to August 31). This measure would eliminate impacts to breeding burrowing owls and all other migratory breeding birds. As an additional measure to avoid impacts to non-breeding owls, surveys for owls will be conducted prior to construction and relocation of any agricultural drains by IID. Any owls present will be excluded from their burrows. If a construction window is not possible and construction is expected during part of the breeding season, specific measures will be undertaken prior to February 1. A qualified biologist must survey within the impact area and excavate all owl burrows and potential owl burrows within the impact zone, and within an additional 50 m (164 ft) beyond the impact zone to avoid having owls attempt to nest on site. The surveys and excavations will be based on methods established by the USFWS and the California Burrowing Owl Consortium (1993). Additional surveys under the supervision of a biologist will be required on a weekly basis until construction begins to assure that new holes are not made or occupied by owls. If, despite these efforts, owls are found nesting within the right of way during construction, the nest(s) will be designated as an Environmentally Sensitive Area(s) and no construction will occur within a radius of 50 m (164 ft) until nesting is complete. Artificial burrows will be designed and placed at specified locations within and/or adjacent to the project vicinity. Design, number, and location of burrows will be coordinated with the district biologist, resident engineer, and maintenance, as well as IID staff.

Any graded areas within the project limits must be seeded with an appropriate erosion control mix and any trees removed will be replaced. In addition, any vegetation clearing including tree removal within the project limits will be limited to the period from September 1 to January 31, the time of year that is outside the breeding season.

Invasive Species

On February 3, 1999, President Clinton signed Executive Order 13112 requiring Federal agency action to combat the introduction or spread of invasive species in the United States. Federal Highway Administration (FHWA) guidance issued August 10, 1999 directs the use of the state's noxious weed list (January 6, 1999) to define the invasive plants that must be considered as part of the National Environmental Policy Act (NEPA) analysis for a proposed project.

Biological surveys were conducted for this project and included all areas surrounding the interchange. The majority of the project north of I-8 is primarily commercial and residential uses. The area to the south of I-8 had been actively farmed until 1985 and presently is an abandoned dirt lot with some scattered Australian saltbush (*Atriplex semibaccata*). The area surrounding the interchange consists of bare dirt slopes landscaped with tamarisk (*Tamarisk chinensis* and *T. gallica*), eucalyptus (*Eucalyptus* ssp.) and small palms. No plants found on the Federal Noxious Weed Regulations (7 CFR 360) list were observed in the project area. Noxious weeds found on the California Exotic Pest Plant Council Exotic Pest Plants of Greatest Ecological Concern in California (October 1999) were detected in the project limits and include Australian saltbush (List A-2; Most Invasive Wildland Pest Plants: Regional), and tamarisk (List A-1; Most Invasive Wildland Pest Plants: Widespread).

Invasive species existing within the project area will be removed prior to construction and replaced with non-invasive landscaping elements that will include drought tolerant native species, whenever practicable. Invasive species may be introduced or spread within the project limits during soil disturbance activities (clearing/grubbing and grading), be present on construction equipment brought onsite or taken offsite, and inadvertently included in seed mixes or in the soil of container stock. Measures to minimize and eradicate invasives will be implemented. In areas of particular sensitivity, such as the Date drain, extra precautions shall be taken to exclude invasive species if found in or adjacent to construction areas. These may include the inspection and cleaning of construction equipment or other eradication strategies. No adverse impacts to sensitive habitat areas involving invasive species are anticipated as a result of the proposed project.

3.11 FLOODPLAIN

Department staff has determined that the proposed interchange reconstruction project is not located within a floodplain. The closest floodplain in the area is the New River Floodplain, which is too distant to be a concern. No floodplain issues exist within the project vicinity.

3.12 HISTORIC AND ARCHAEOLOGICAL PRESERVATION

The proposed project would not impact historic or archaeological resources within the study area. In a letter dated August 21, 2002, the State Historic Preservation Officer (SHPO) concurred with FHWA and the findings of the *Historic Properties Survey Report* (HPSR) that the proposed project will have no effect on historic properties. This letter of concurrence completed the Section 106 determination and review (please see appendix A, exhibit 24, *Office of Historic Preservation Letter*). All of the arguments of 36 CFR 800 have been met.

3.13 HAZARDOUS WASTE

A hazardous waste evaluation was completed on September 25, 2001 for the proposed project.

Affected Environment

All improvements to the north of I-8 are within existing state right of way and contain no hazardous waste sources. Proposed R/W acquisitions for the project area south of I-8 consist of former agricultural lands. Portions of the project area south of I-8 contain drainage features that are constucted of asbestos concrete pipe.

Impacts

This project was screened by Department staff for aerially deposited lead (ADL) and a determination was made that ADL testing was not warranted. Screening is based on traffic volume and distance the proposed work is from the main lanes. ADL deposits occur within 20 feet of roadways. Older routes with 20,000-30,000 ADT prior to 1985 do not have significant concentrations of ADL. This portion of I-8 had less than 20,000 ADT prior to 1985; therefore, no hazardous waste impacts or concerns are anticipated due to reconstruction of the interchange. Department staff determined that no hazardous waste sources exist within the project area.

Mitigation

The project's Special Provisions for construction will address the proper procedure for disposal of asbestos concrete pipe, which may be excavated within the project area.

3.14 VISUAL/AESTHETICS

A Visual Impact Assessment was completed by Department staff on August 21, 2002 according to FHWA Visual Assessment Evaluation methodology.

Affected Environment

The setting of the proposed project is a unique visual environment comprised of a variety of existing or expected land uses. The majority of the land south of I-8 is vacant or in agriculture, with some existing and planned housing developments near the project area. Land north of I-8 has several kinds of uses, including single and multifamily family residential, as well as commercial uses extending north along Imperial Avenue.

The visual quality of the area is low to moderate, varying according to specific locations along the highway. The project viewshed is very flat, below sea level and altered only by built objects. The existing Imperial Avenue overpass can be seen from La Brucherie Road to the west and from Eighth Street/Clark Road to the east. The I-8/Fourth Street (Route 86) interchange is a major north/south conventional highway interchange and currently serves as the main entrance into the city of El Centro.

Impacts

The Visual Impact Assessment determined that all "build" alternatives would create visual impacts and, though the impacts would differ slightly for each alternative, the major components of the impacts would remain the same for each.

Proposed sound abatement (walls/berms) would create a potential moderate-to-high impact by restricting the I-8 user viewshed to within the freeway R/W. Sound abatement would obstruct the current views of freeway travelers, which extend into the rear yards of homes near the interchange and beyond. Views of the interchange and any views that could extend beyond would be restricted from residences (see Section 3.7 of this chapter for details on sound abatement measures). In the northeast quadrant of the project area, the space between the R/W line and the proposed noise abatement wall on top of the berm would produce visual impacts to adjacent residents. This space would be utilized by the Department for maintenance of the berm/wall area and would not be visible from the freeway.

The proposed overcrossing structure would produce a moderate visual impact to freeway travelers. Slopes at the bridge ends, the width of the structure, and standardization of the bridge features, particularly fencing, would contribute to the visual impact of the overcrossing structure. Due to the flat topography of the surrounding area, views of the new pavement would be limited to those utilizing the overcrossing or the freeway. The visual impact created by the additional paving would be low.

The drainage facilities (infiltration basins and swales) would limit the potential for planting, potentially creating moderate visual impacts to highway users, particularly those entering or exiting the highway. Viewers from permanent residences would be expected to experience low visual impacts from the drainage facilities.

The removal of existing vegetation and landscaping within the relatively flat topography of the vicinity, in conjunction with construction of new structural elements or modification of existing structures would cause a moderate visual impact to highway travelers. Permanent residences along the corridor (such as single-family homes and multi-family apartments), as well as commercial development and temporary residents of motels would experience low visual impacts. It is not expected that reconstruction and landscaping of the interchange would either displace homeless transient populations or increase the attractiveness of the area as a focal point for habitation or loitering by homeless transients.

Locations of new structures that would be expected to produce visual impacts would vary among alternatives. Alternative 1, the No-Build alternative would produce no new visual impacts. Alternative 2 would produce visual impacts in all four quadrants of the proposed project area, within existing R/W and 5 ha (12.4 ac) of additional R/W. Alternative 4 would produce visual impacts within three quadrants of the project area, within R/W and 2 ha (5 ac) of new R/W. Alternative 5 would also produce visual impacts within three quadrants of the project area, within R/W and 4.3 ha (10.6 ac) of new R/W. Installation of new piping connections within the project area for the Date Drain would be underground. The Visual Impact Assessment determined that the overall visual impact created by all three "build" alternatives is moderate. Therefore, mitigation measures would be required to reduce the visual impacts created by the project.

Mitigation

In order to reduce the visual impacts of the proposed "build" alternatives, mitigation measures for visual impacts created by the proposed project will be required. The intent of the mitigation measures is to reduce level of impacts from moderate to low. Required measures would reduce visual impact levels and produce beneficial effects within the project area as follows:

Landscape mitigation:

- A cooperative agreement between the Department and the city of El Centro will be approved prior to any landscape planting of the project area. The cooperative agreement will state that the City shall provide perpetual landscape maintenance and water after the Department designs, constructs and provides three years of plant establishment. Preliminary meetings between the El Centro Public Works Director and the District Landscape Architect have led to the above understanding.
- Existing landscaping will be removed during construction and replaced.
- Invasive species existing within the project area will be removed prior to construction and replaced with non-invasive landscaping elements that will include drought tolerant native species, whenever practicable. Invasive species may be introduced or spread within the project limits during soil disturbance activities (clearing/grubbing and grading), be present on construction equipment brought onsite or taken offsite, and inadvertently included in seed mixes or in the soil of container stock. Measures to minimize and eradicate invasives will be implemented. In areas of particular sensitivity, such as the Date drain, extra precautions shall be taken to exclude invasive species if found in or adjacent to

construction areas. These may include the inspection and cleaning of construction equipment or other eradication strategies.

- Landscape the freeway facility with Department funding according to a "Gateway" theme. Included will be appropriate drainage design, colored rock ground cover, trees, shrubs, and planted ground covers, such as grasses. Appendix A, exhibit 20 A-D, *Landscaping Concepts* provide examples of landscaping elements and themes, some of which could be incorporated into a final landscaping design. Landscaping elements would be selected according to feasibility and local conditions and would include use of water efficient irrigation and drought tolerant native species, whenever practicable. As per the cooperative agreement described above, the landscaping theme will be designed with input from the city of El Centro as well as from the public. If cultural elements should be considered for inclusion in the design theme, all potentially affected groups will be consulted regarding an appropriate design.
- Design landscaping to reduce potential visual impacts to adjacent residents resulting from the space created in the northeast quadrant between the R/W line and the proposed noise abatement (wall on top of a berm). Access to the space would be controlled through fences, locked maintenance gates, and the wall on top of the berm. The space will be landscaped to discourage potential usage of the area by homeless transient populations.
- Signage, if used within the project limits, will be of a visually pleasing design.
- Provision of an irrigation system compatible with the desert environment. Examples include flood or bubbler irrigation.

Drainage:

- Provide natural looking drainage structures (infiltration basins and swales). This may include utilizing riprap or cobble with minor plantings such as grasses, and a drainage design that creates a meandering effect.

Sound Walls:

- Enhance walls to blend into the surrounding environment. This could include adding forms, textures (relief), a theme pattern, and colors. The visual effect of the walls will be broken with pilasters set apart at an acceptable distance, usually about 4.6 to 6.1 m (15 to 20 ft).
- Plant and irrigate the proposed wall/berm combination to help screen soundwalls (according to the design and conditions described above in the landscape mitigation section). Walls would receive an aesthetic treatment. Appendix A, exhibit 21 A-D, *Landscaping Concepts* provide examples of landscaping elements and themes, including examples of aesthetic sound wall designs. Decisions as to aesthetic treatment of sound walls will be made subsequent to local agency and public review of this document. Walls higher than 1.8 m (6 ft) would have pilasters set apart at 6.1 m (20 ft).

Bridge:

- Provide architectural detailing in the structures consistent with other built forms in the viewshed. This would include painting the bridge, using design elements on the bridge and bridge ends, slope paving detail (artwork), and bridge rail. Painting of structures to provide aesthetic enhancement will be done only during original construction. The use of paint or stain will be developed with the collaboration of Design and Maintenance in selecting the final procedure. Techniques utilized and proven satisfactory under desert conditions by the

Arizona Department of Transportation (ADOT) shall be evaluated by Maintenance for use in this project. Painted structures will be repainted to match existing bridge colors only when necessary to mask out graffiti or to aesthetically blend repaired areas.

- Provide enhanced freeway appurtenances such as painted fencing. All fence materials shall be painted a flat black to visually blend structures into the visual background. Appurtenance painting will be done only during original construction, except when needed to mask out graffiti or to aesthetically blend repaired areas.

Overall Mitigation:

- With the implementation of the mitigation measures proposed for all alternatives of the project (as described above), overall mitigation will reduce visual impacts to low.
- A landscaping contract will be completed immediately following reconstruction of the interchange. Landscaping design will incorporate a "Gateway" theme to provide visually beneficial features to the community and to highway users.

3.15 UTILITIES

All "Build" alternatives would be expected to impact existing utilities within the project area. These utilities are listed below:

- A sewer lift station owned and operated by the City of El Centro is located on 106 m^2 (1150 ft^2) in the southwest quadrant of the project area (exhibit 13, *El Centro Zoning & Land Use Map* and appendix A, exhibit 16, *Utilities*). The through lanes of the proposed overcrossing would be in direct conflict with the lift station, near the center of the southern portion of the interchange. In coordination with the City, the Department would relocate the lift station to a nearby site, most likely City-owned. A temporary construction easement will be acquired if relocation of the lift station is to City-owned property. Power poles that provide electrical service to the sewer lift station would also be affected and would be relocated by the Department in cooperation with the Imperial Irrigation District (IID).
- An IID drainage channel (the Date Drain) located parallel to the proposed southern extension of Imperial Avenue would be affected by the fill slope of the proposed interchange and would be realigned within the project limits, piped and covered with fill dirt (appendix A, exhibits 10-12 and appendix A, exhibit 16, *Utilities*).
- Water and sewer lines located in the vicinity of the interchange reconstruction may have to be relocated.

No substantial impacts to utilities resulting from the interchange reconstruction are expected since all affected utilities will be relocated.

3.16 GEOTECHNICAL

A *Preliminary Geotechnical Report* was completed for the proposed project on May 2, 2002.

The proposed project is located within the Imperial Valley, which is underlain with clay and silt deposits. Topographic relief within the project limits is largely flat with natural drainage northward toward the Salton Sea. Groundwater within the project area was determined to be 2.3 m (7.5 ft) to 2.6 m (8.5 ft) below the existing ground surface and may experience fluctuations due to local agricultural practices.

The Imperial Valley is the spreading center of the San Andreas Rift and is the most seismically active area within the contiguous U.S. No known active faults cross the project area. Several active faults exist within the region, some of which may be capable of producing earthquakes of up to a Maximum Credible Magnitude 7.5 on the Richter scale.

The Department will incorporate standard design and construction measures to address seismic risk. The resident engineer will ensure that Department Standard Specifications are adhered to in constructing structurally sound, earthquake resistant bridges, ramps, and roadway, for maximum safety to the traveling public. A general objective of earthquake–resistant design would be for structures to survive a light-to-moderate earthquake undamaged, to survive a moderate quake with an acceptable amount of damage, and to survive a moderate-to-heavy quake without totally collapsing or jeopardizing the lives of motorists, even though the structural damage may be beyond repair.

The *Preliminary Geotechnical Report* approximates the liquefaction potential of the subsurface soils within the project limits to be low to moderate. Engineering measures available to reduce the likelihood of damage due to liquefaction are:

- Densification of the loose soil layer either by excavation and recompaction or by in-place techniques.
- The use of piles under structures.
- The use of tensile reinforcement in embankments.

Studies will be conducted to evaluate the likelihood and probable effects of liquefaction to highway features and to determine appropriate mitigation measures. The proposed cut and fill slopes of 1:2 proposed for the highway embankments would be stable and local soil materials can be used for their construction. Imported materials would need to be tested. Expansive characteristics of materials and length of time required to reach a necessary 90 percent consolidation of underlying soils will be considered during the design and construction phases of the project. With the incorporation of the design and construction measures described above, no substantial geotechnical effects are expected.

3.17 CONSTRUCTION

Reconstruction of the I-8/Imperial Avenue Interchange would involve the complete demolition and removal of the existing bridge structure over I-8 and the eastbound exit ramp to Imperial Avenue. Removal of most of the existing westbound entrance and exit ramps and the eastbound entrance ramp would also be required. Construction easements of approximately 1.2 m (4 ft) will be required along the north side of the R/W line in the northwest quadrant of the project area. The construction resident engineer will ensure compliance with the *California Department of Transportation Standard Specifications, July 1999* for all construction activities. Construction would be expected to begin in late 2004 and to be completed in late 2006.

Traffic Impacts and Mitigation

A *Preliminary Transportation Management Plan* (PTMP), including an operational system review for the project, has been completed. Impacts to traffic for eastbound and westbound I-8 during the interchange reconstruction would be minimal. The existing trumpet type interchange and two-lane overcrossing will be used as a temporary detour during construction of the proposed interchange and four-lane overcrossing. The existing overcrossing will be demolished once two lanes are completed and open for traffic on the new overcrossing, with connections established to the eastbound and westbound entrance and exit ramps. Temporary detours may be constructed on I-8 in the median and removed after construction of the new overcrossing. Alternate detour routes may be required on city streets for particular phases of construction. Night work may be required for removal of the existing bridge over I-8 (involving the use of jackhammers and other demolition equipment until 7 pm) and for lane closures, setting of temporary barriers and crash cushions, and pavement delineation for temporary detours on I-8. Traffic control for lane closures during construction and during demolition of the existing overcrossing would be conducted during non-peak traffic hours. Transportation permitting for oversize loads will be maintained during and after construction.

Noise Impacts and Mitigation

Construction noise is regulated by *California Department of Transportation Standard Specifications, July 1999*, Section 7-1.01I, "Sound Control Requirements". These requirements state that noise levels generated during construction shall comply with applicable local, state, and federal regulations and that all equipment shall be fitted with adequate mufflers according to the manufacturers' specifications.

During the construction phases of the project, noise in the immediate area of construction would be primarily dominated by local traffic noise but may be intermittently dominated by noise resulting from construction activities. The intensity of construction noise impacts would be expected to vary for different areas of the project site and also vary depending on the specific construction activities.

Table 3.17-1 summarizes noise levels produced by construction equipment commonly used on roadway construction projects. As indicated, equipment involved in construction is expected to generate noise levels ranging from 70 to 90 dBA at a distance of 15 m (50 ft). Noise produced by construction equipment would be reduced over distance at a rate of about 6 dBA per doubling of distance.

Among the measures that will be implemented to minimize temporary construction noise impacts are:

- Changing the location of stationary construction equipment.
- Turning off idling equipment.
- Notifying adjacent residents in advance of construction work.
- Installing acoustic barriers around stationary construction noise sources.
- Restricting night work to less noisy activities, such as striping and signing between the hours of 7 pm and 7 am.
- Restricting pile driving and heavy construction activities to daytime hours (between 7 am and 7 pm), weekdays, and non-holidays

With the above measures, no substantial noise impacts from construction are anticipated.

TABLE 3.17-1 CONSTRUCTION EQUIPMENT NOISE	
Type of Equipment	Maximum Noise Level dBA at 15 meters (49.2 feet)
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoe	80
Pneumatic Tools	85
Concrete Pump	82
Jackhammer	98

Source: Federal Transit Administration 1995

Water Quality Impacts and Mitigation

The contractor shall comply with all requirements of Section 308 of the Federal Water Pollution Control Act. Compliance with the Clean Water Act and regulation of temporary impacts to water quality resulting from erosion and construction activities are observed by the Department through guidelines and requirements listed in the following Caltrans documents:

- *Permit for General Construction Activities No. CAS000002, Order No, 99-08-DWQ*
- *NPDES Permit for the State of California Department of Transportation Properties, Facilities, and Activities*, No. CAS000003, *Order No, 99-06-DWQ*
- *Caltrans Standard Specifications*, 1999
- *Water Pollution Control Special Provision* (07-340) or (07-345)
- *Caltrans Storm Water Quality Handbooks Project Planning and Design Guide*, 2000
- *Caltrans Storm Water Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, 2000*

Temporary BMPs for all five categories below would be implemented in order to avoid and minimize temporary impacts to water quality. These include:

- Soil stabilization
- Sediment control
- Wind erosion
- Tracking control
- Non-storm water control
- Waste management and materials pollution control

Slopes would be sprayed hydraulically with applied rock fiber containing stabilizing emulsion and would be reapplied as necessary during construction to conform to NPDES requirements. Project construction would impact the piped portion of the Date Drain within the project area south of I-8, which would be re-piped and covered within the project R/W as part of the interchange reconstruction. If dewatering is necessary, an NPDES permit shall be obtained and the Resident Engineer will require the construction contractor to prepare a dewatering plan. No interruption of drainage within the Date Drain would occur. Disposal of demolition or construction materials within the project area will require approval of the NPDES unit. Temporary impacts to water quality that may result from erosion and construction activities are not expected to produce adverse effects.

Air Quality Impacts and Mitigation

The proposed project would be expected to generate air pollutants during construction. Exhaust from construction equipment contains hydrocarbons, nitrogen oxides, carbon monoxide, suspended particulate matter, and odors. However, the largest percentage of pollutants would be windblown dust generated during excavation, grading, hauling, and various other activities. The impacts of these activities would vary each day as construction progresses. Dust and odors potentially would cause temporary annoyance to some residents close to the project area.

The Resident Engineer shall ensure compliance with all requirements of Section 114 of the Clean Air Act. In order to control fugitive dust during construction and exhaust emissions of construction equipment, the construction resident engineer will ensure adherence to guidelines addressed in Sections 10 and 7-1.01F of the *California Department of Transportation Standard Specifications, July 1999*, which will require the contractor to comply with Imperial Valley Air Pollution Control District's Rules, Ordinances, and Regulations, specifically Rule 800. Application of water and/or dust palliative is among the measures that will be used to control dust generation. Temporary and intermittent odors may result during construction but are not expected to be substantial.